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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/627,433 | 07/25/2003 | Michael W. Barnes | AAI-14186 | 2346 |

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05/11/2004

James D. Erickson
Autoliv ASP, Inc.
3350 Airport Road
Ogden, UT 84405

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| EXAMINER |
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FELTON, AILEEN BAKER

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| ART UNIT | PAPER NUMBER |
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3641

DATE MAILED: 05/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/627,433

Applicant(s)

BARNES ET AL.

Examiner

Aileen B Felton

Art Unit

3641

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/25/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-4, 8-14, 17-23, 26-33 are rejected under 35 U.S.C. 112, first paragraph,

because the specification, while being enabling for a gas generant composition with specific copper compounds disclosed in the specification does not reasonably provide enablement for any gas generant composition with any copper-containing compound.

The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. The specification is enabled only for the composition that contains certain copper compounds and not any copper-containing compound. Clearly it is not the case that all copper-containing compound will result in the neutralization of HCl. One of ordinary skill in the art would not be able to determine what compositions would meet this limitation without undue experimentation.

4. Claims 1-4, 8-14, 17-23, 26-33 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The specific copper compound is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA

Art Unit: 3641

1976). Applicant's claims require that HCl is neutralized but only requires any copper-containing compound. Since this ingredient is essential to achieving the neutralization that is claimed, they must be included in the claims. One of ordinary skill in the art would not be able to determine what compositions would meet this limitation without undue experimentation.

5. Claims 1-4, 8-14, 17-23, 26-33 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted element is: the specific copper compound. Since this ingredient is essential to achieving the neutralization that is claimed, they must be included in the claims. One of ordinary skill in the art would not be able to determine what compositions would meet this limitation without undue experimentation.

6. Claims 1-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. All the claims recite a "chlorine-containing" composition. There is no chlorine present in the composition; perhaps Applicant is referring to the combustion gases?

7. Claims 1-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims require that at least 98 % of the chlorine scavenger is a copper compound. This language is inconsistent with comprising scope

claims, since it appears to limit the components used but the claim scope is open to any other components, even in major amounts.

8. Claims 1-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant claims that the composition can also include iron oxide or copper chromite but apparently this would be restricted from the claims since the iron oxide could act as a chlorine scavenger. The claim scope is unclear since claim 1 appears to prohibit the use of other chlorine scavengers yet the dependent claims add them back in.

9. Claims 8-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant's claims refer to a precursor blend, it is unclear what this is and also what the effect of this language is on the claim scope.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-5, 7-13, 16-23, 25-29, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blomquist et al (Pub. No. US2003/0145921).

Blomquist et al discloses a gas generating composition that when ignited produces gas and fills the air bag in an air bag device. The composition comprises a

Art Unit: 3641

fuel from 0-50 % such as guanidine nitrate (para. 0061), a mixture of oxidizers such as basic copper nitrate at more than 50 %, iron oxide at less than 50 % and up to 30 % of ammonium perchlorate (para. 0049-0055) all with respect to the total of the oxidizer in the composition. The composition further includes Al_2O_3 or SiO_2 as slag formers (para. 0062). The gas generating material is formed by mixing (para. 0077). There is not a specific example that uses the claimed composition with the exact amounts.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the particular oxidizers since Blomquist suggests that a mixture of three is used and also to vary the amounts of the particular ingredients of the gas generating composition to achieve a desired result. It is well-settled that optimizing a result effective variable is well within the expected ability of a person of ordinary skill in the subject art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955).

12. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blomquist et al (Pub. No. US2003/0145921). as applied to claims 1-5, 7-13, 16-23, 25-29, and 31-33 above, and further in view of Holland et al (5,641,938).

Holland teaches the use of an iron blue pigment as an additive to a gas generating composition (Table 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the iron blue pigment as taught by Holland since it is a known additive used in gas generating compositions.

13. Claims 1-6, 8-13, 15, 17-24, 26-30, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hinshaw et al(6,241,281).

Hinshaw et al discloses a gas generating composition for use in an air bag device which comprises 30-90 % of copper diammine dinitrate, a co-oxidizer such as ammonium perchlorate (col. 8, lines 32-37) and a fuel such as guanidine nitrate (col. 11, lines 25-30). The sum of the guanidine nitrate and the co-oxidizer is from 10-60 % (col. 12, lines 10-30). The composition can also comprises additives such as iron oxide or silicon oxide (col. 9, lines 35-67). There is not a specific example that uses the claimed composition with the exact amounts.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the copper diammine dinitrate with the ammonium perchlorate since Hinshaw suggests that a mixture of the two is used and also to vary the amounts of the particular ingredients of the gas generating composition to achieve a desired result. It is well-settled that optimizing a result effective variable is well within the expected ability of a person of ordinary skill in the subject art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1955).

14. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hinshaw et al (6,241,281) as applied to claims 1-6, 8-13, 15, 17-24, 26-30, 32 and 33 above, and further in view of Holland et al (5,641,938).

Holland teaches the use of an iron blue pigment as an additive to a gas generating composition (Table 1).

Art Unit: 3641

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the iron blue pigment as taught by Holland since it is a known additive used in gas generating compositions.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aileen Felton whose telephone number is (703) 306-5751. The examiner can normally be reached on Monday through Friday from 6:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone, can be reached on (703) 306-4198.

The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7687. The fax number for submissions before a final action is (703) 872-9326, for after final submissions is (703) 872-9327, and customer service is (703) 872-9325.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

Aileen B. Felton

Aileen B. Felton